

SPMT
(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
6 December 2001 (06.12.2001)

PCT

(10) International Publication Number
WO 01/92524 A3

(51) International Patent Classification⁷: C12N 15/12,
C07K 14/47, 16/18, G01N 33/68, 33/50, 33/53, A01K
67/027, C12N 15/82, C12Q 1/68, A61K 38/17, 48/00,
31/70, C12N 15/11, C07K 19/00, 16/46

Easy Street #25, Mountain View, CA 94043 (US). SHAN-
NON, Mark, E.: 3131-1 Arcadia Common, Livermore,
CA 94550 (US).

(21) International Application Number: PCT/US01/16981

(74) Agents: BECKER, Daniel, M. et al.; Fish & Neave, 125 I
Avenue of the Americas, New York, NY 10020 (US).

(22) International Filing Date: 25 May 2001 (25.05.2001)

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK,
SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/207,456 26 May 2000 (26.05.2000) US
60/234,687 21 September 2000 (21.09.2000) US
60/236,359 27 September 2000 (27.09.2000) US
0024263.6 4 October 2000 (04.10.2000) GB
pct/US01/00670 30 January 2001 (30.01.2001) US
pct/US01/00666 30 January 2001 (30.01.2001) US
pct/US01/00667 30 January 2001 (30.01.2001) US
pct/US01/00664 30 January 2001 (30.01.2001) US
pct/US01/00669 30 January 2001 (30.01.2001) US
pct/US01/00665 30 January 2001 (30.01.2001) US
pct/US01/00668 30 January 2001 (30.01.2001) US
pct/US01/00663 30 January 2001 (30.01.2001) US
pct/US01/00662 30 January 2001 (30.01.2001) US
pct/US01/00661 30 January 2001 (30.01.2001) US
60/266,860 5 February 2001 (05.02.2001) US

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,
IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF,
CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a
patent (Rule 4.17(ii)) for all designations

Published:

— with international search report
— with (an) indication(s) in relation to deposited biological
material furnished under Rule 13bis separately from the
description
— with sequence listing part of description published sepa-
rately in electronic form and available upon request from
the International Bureau

(88) Date of publication of the international search report:
6 June 2002

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(71) Applicant: AEOMICA, INC. [US/US]: 928 East Arques
Avenue, Sunnyvale, CA 94086-4520 (US).

(72) Inventors: GU, Yizhong: 965 East El Camino Real #113,
Sunnyvale, CA 94087 (US). JI, Yonggang: 133 West 36th
Avenue, San Mateo, CA 94403 (US). PENN, Sharron, G.:
617 South Delaware Street, San Mateo, CA 94402 (US).
HANZEL, David, K.: 988 Loma Verde Avenue, Palo Alto,
CA 94303 (US). RANK, David, R.: 117 El Dorado Com-
mons, Fremont, CA 94539 (US). CHEN, Wensheng: 210

(54) Title: MYOSIN-LIKE GENE EXPRESSED IN HUMAN HEART AND MUSCLE

(57) Abstract: Presented are a myosin-like protein particularly expressed in human heart and muscle, isolated nucleic acids encoding the myosin-like protein, compounds and compositions derivable directly or indirectly therefrom, and diagnostic and therapeutic methods for using the same.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/12 C07K14/47 C07K16/18 G01N33/68 G01N33/50
G01N33/53 A01K67/027 C12N15/82 C12Q1/68 A61K38/17
A61K48/00 A61K31/70 C12N15/11 C07K19/00 C07K16/46

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N C07K G01N A01K C12Q A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EMBL

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE EMBL [Online] Entry HS125H2, Acc.no. Z98949, 6 September 1997 (1997-09-06) LLOYD, D.: "Human DNA sequence from clone CTA-125H2 on chromosome 22q11-12 Contains part of the gene for a novel protein similar to KIAA0216 and myosin heavy chain, ESTs, GSSs and a CpG Island" XP002177437 see nt. 1-120630 -& DATABASE SWISSPROT [Online] Entry/Acc.no. 060772, 1 August 1998 (1998-08-01) LLOYD D.: "BK125H2.1 (NOVEL PROTEIN SIMILAR TO KIAA0216 AND MYOSIN HEAVY CHAIN) (FRAGMENT)" XP002191511 the whole document -& DATABASE EMBL [Online]</p> <p style="text-align: center;">-/-</p>	<p>1-36, 41-61</p>

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

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"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

27 February 2002

Date of mailing of the international search report

05. 03. 2002

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Smalt, R

INTERNATIONAL SEARCH REPORT

International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	Entry/Acc.no. AB042648, 16 May 2001 (2001-05-16) YOKOTA, J. ET AL.: "Homo sapiens bk125h2.1 mRNA, complete cds." XP002177438 the whole document ---	
X	DATABASE EMBL [Online] Entry HS006124, Acc.no. R41006, 4 May 2000 (2000-05-04) WAYE M.M.Y. ET AL.: "Hk594-f Adult heart, Clontech Homo sapiens cDNA clone k594-f, mRNA" XP002191460 the whole document ---	2-5,10, 11,55,56
P,X	WO 00 58473 A (CURAGEN CORP ;LEACH MARTIN (US); SHIMKETS RICHARD A (US)) 5 October 2000 (2000-10-05) see seq.ID's 3195 and 3196 and paragraphs relating to ORF1598 ---	2-5, 12-27, 31-36, 41-52, 55,56,61
P,X	WO 00 77173 A (HUMAN GENOME SCIENCES INC ;ROSEN CRAIG A (US); RUBEN STEVEN M (US)) 21 December 2000 (2000-12-21) see seq.ID's 12, 53, 117, and gene #2 ---	2-5, 12-27, 31-36, 41-52, 55,56,61
E	WO 01 57276 A (CHEN WENSHENG ;HANZEL DAVID K (US); PENN SHARRON G (US); RANK DAVI) 9 August 2001 (2001-08-09) see probe with seq.ID 12818 and seq.ID 25440 -----	2-5,55, 56

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 01/16981

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

Although claims 41 and 42 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☒ Claims Nos.: 37-40
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 37-40

Present claims 37-40, claim 41 in as far as it depends upon claim 37, and claim 42 in as far as it is dependent upon claim 40, relate to products defined by reference to a desirable characteristic or property, namely having (ant)agonistic activity towards the protein of claim 22. The application provides no support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for any such products. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the product by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search impossible. Consequently, the present search report does not cover claims 37-40, and claims 41 and 42 have only been searched to the extent that they depend on other claims than claims 37 and 41, respectively.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/16981

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 0058473 A	05-10-2000	AU 3774500 A EP 1165784 A2 WO 0058473 A2	16-10-2000 02-01-2002 05-10-2000
WO 0077173 A	21-12-2000	AU 5022200 A AU 5174600 A WO 0070076 A1 WO 0077173 A1	05-12-2000 02-01-2001 23-11-2000 21-12-2000
WO 0157276 A	09-08-2001	AU 3087801 A AU 3087901 A AU 3088001 A AU 3088101 A AU 3088201 A AU 3088301 A AU 3275701 A AU 3275901 A AU 3276001 A AU 3311401 A AU 3658901 A GB 2361238 A ,B WO 0157270 A2 WO 0157271 A2 WO 0157272 A2 WO 0157273 A2 WO 0186003 A2 WO 0157274 A2 WO 0157275 A2 WO 0157276 A2 WO 0157277 A2 WO 0157278 A2 WO 0157251 A2 WO 0157252 A2 WO 0192524 A2 GB 2360284 A ,B EP 1158049 A1	14-08-2001 14-08-2001 14-08-2001 14-08-2001 14-08-2001 14-08-2001 14-08-2001 14-08-2001 14-08-2001 14-08-2001 14-08-2001 17-10-2001 09-08-2001 09-08-2001 09-08-2001 09-08-2001 15-11-2001 09-08-2001 09-08-2001 09-08-2001 09-08-2001 09-08-2001 09-08-2001 09-08-2001 09-08-2001 09-08-2001 06-12-2001 19-09-2001 28-11-2001